ABSTRACT

A method for establishing and maintaining a differential snapshot of a set of files stored on a volume is disclosed. The invention achieves processing time and disk space optimizations by avoiding copy-on-write operations for logically insignificant moves of blocks, such as the block rearrangements characteristic of defragmentation utilities. A file system enhancement enabling the passing of a block copy command from the file system to lower-level drivers, is used to inform the snapshotter that a block move operation is not logically meaningful. When the logically insignificant move is of a block whose data forms part of the data captured in the snapshot virtual volume, and when the move is to a block location that is functioning as logical free space, the snapshotter can simply modify its block bitmap and update translation table entries without needing to perform a copy-on-write.